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PROVISIONAL SPECIFICATION.

Improvements in Apparatus for the Dispensing of Disinfectants.

We THOMAS ROWAN, GEORGE ADLEY and FREDERICK TOLKIEN, trading as "The Coal Tar Disinfectant Company" of 14 St. Mary Axe, in the City of London, Manufacturing Chemists do hereby declare the nature of this invention to be as follows:—

5 Our invention relates to apparatus for the dispensing of disinfectants, and has for its object the provision of means whereby such dispensing is effected either automatically by the change of level in the flushing tank or in conjunction with the mechanism for the control of the flushing liquid or by a lever independent of the flushing tank or by other mechanism in connection with the flushing arrangements,
10 and in uniform and definite quantities, and with no leak or loss of disinfectant or weakening of the strength of the fluid disinfectant during the period of time between the flushes.

Our invention consists firstly in a valve and dispensing device of special construction and secondly in the means for operating the said valve, so that the
15 above mentioned conditions are carried out.

To carry out our invention we provide a tank or vessel of any convenient form, to hold the store of disinfecting liquid and attach to it direct or by means of a pipe, or other connecting device, a valve of special construction. This said valve is formed of two pistons, spaced a certain distance apart and connected together by a
20 rod or other convenient means.

This valve is adapted to slide in a cylindrical seating, of such a length, that the said seating can exactly cover or more than bridge over the space between the opposite edges of the two pistons. From this it will be seen that when the valve is in its mid position, in the seating, a given volume between the pistons will be
25 enclosed by the seating.

Both pistons are provided with a valve edge or rim which engages with one end of the cylindrical seating, that is the top piston has a valve edge to engage with the top end of the seating and the bottom piston has a valve edge to engage with the bottom edge of the seating, so that whichever end position the valve occupies it is
30 always closed.

The pistons and other parts of this said valve are of such a length as to allow of the space between the pistons passing out of either end of the seating.

The object of this is that when for instance the valve is in its uppermost position and in communication with the tank of disinfectant the space between the pistons is
35 filled with disinfecting liquid and upon the valve being moved towards its lower position, the liquid is first imprisoned in the seating thus determining the given amount to be dispensed, and on the valve reaching its lowest position, the upper edge of the lower piston is some way below the edge of the cylindrical seating, and the liquid escapes from between the pistons into the delivery pipe or tank.

40 The valve may be constructed either from a tube with the ends closed and with one or more slots of the proper length arranged a proper distance between the two ends, or it may be formed of pistons arranged on a central support.

The tank for holding the disinfectant we make so as to be placed inside or outside the flushing tank or other device, and we may operate the valve of the disinfectant
45 tank by means of a float connected thereto and operated by the variation of level in the flushing tank.

Or equivalently the valve of the disinfectant tank may be connected to and operated by the valve mechanism of the flushing tank.

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Or where there is no flushing tank the valve may have an independent operating mechanism for itself, which may consist of a pivotted counterbalanced lever which is connected to the valve by any means.

The operation of our device is as follows:—When a flush is to be made, the ordinary flush mechanism is operated, and this, in turn, moves the valve of the 5 disinfectant tank and a given quantity of disinfectant is discharged into the flushing tank.

Or when the float operating arrangement is used, the valve of the disinfectant tank is preferably in its upper position when the flush tank is full; but when the flush water is let out the float drops and brings the valve with it, thus delivering a 10 given quantity of disinfectant into the flush tank, to be mixed with the charge of water during its delivery. The fresh water re-admitted in its turn operates the float and raises the valve of the disinfectant tank into the upper position to receive a fresh charge of disinfectant.

As the pistons fit the seating very accurately no leak takes place during the 15 movement of the valve, and the valve in its end positions is maintained quite tight by the special valve surface or rim or one or other piston engaging with the valve seat on one or other end of the cylindrical seating.

We may make the valve of the disinfectant tank adjustable as to volume which may conveniently be done by increasing or decreasing the distance between the 20 cutting off edges of the valve.

Dated this 16th day of November 1892.

FELL & WILDING,
1, Queen Victoria Street, E.C., Agents for the Applicants.

COMPLETE SPECIFICATION.

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Improvements in Apparatus for the Dispensing of Disinfectants.

We, THOMAS ROWAN, GEORGE ADLEY and FREDERICK TOLKIEN, trading as "The Coal Tar Disinfectant Co." of 14 St. Mary Axe in the City of London Manufacturing Chemists, do hereby declare the nature of our invention and in what manner the same is to be performed to be particularly described and ascer- 30 tained in and by the following statement:—

Our invention relates to apparatus for the dispensing of disinfectants, and has for its object the provision of means whereby such dispensing is effected either auto- matically by the change of level in the flushing tank or in conjunction with the mechanism for the control of the flushing liquid or by a lever independent of the 35 flushing tank or by other mechanism in connection with the flushing arrangements and in uniform and definite quantities, and with no leak or loss of disinfectant or weakening of the strength of the fluid disinfectant during the period of time between the flushes.

Our invention consists firstly in a valve and dispensing device of special 40 construction and secondly in the means for operating this said valve, so that the above mentioned conditions are carried out.

In order that my invention may be the better understood we will now proceed to describe it in relation to the drawings hereunto annexed reference being had to the letters & figures marked thereon. Like letters refer to like parts in the various 45 figures.

Figure 1 is a view of one form of our apparatus with the disinfectant tank and dispensing valve in section.

Figure 2 is a view of a modified arrangement in which the disinfectant tank is situated within the flush tank the valve being operated direct through the medium 50 of a float by the change of level of liquid in the flush tank.

Figure 3 is a sectional view of a modified construction of the dispensing valve in which means are provided for adjusting and varying the quantity of disinfectant to be dispensed.

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To carry out our invention we provide a tank or vessel A of any convenient form to hold the store of disinfecting liquid and attach to it direct as shown in the Figure 1 or equivalently by means of a pipe or other connecting device, a valve B of special construction.

5 The said valve B is formed of two pistons C C spaced a certain distance apart and connected together by a tube or rod D or other convenient means.

This valve is adapted to slide in a cylindrical seating E of such a length, that the said seating E can exactly cover or more than bridge over the space between the opposite edges of the two pistons C¹ C¹.

10 From this it will be seen that when the valve B is in its mid position in the seating E as shewn in Fig. 3 a given volume between the pistons C¹ C¹ will be enclosed by the seating.

Both pistons C C are provided with a valve edge or rim F which engages with one end of the cylindrical seating E that is the top piston C has a valve edge to
15 engage with the top end of the seating E and the bottom piston C has a valve edge to engage with the bottom edge of the seating E so that which ever end position the valve occupies it is always closed.

The pistons C C and other parts of this said valve B are of such a length as to allow of the space between the pistons passing out of either end of the seating
20 forming a communication with the space between the two pistons and the outside either at the top or bottom end of the valve. The object of this is that when for instance the valve B is in its uppermost position as shewn in Fig. 1 and in communication with the tank of disinfectant A the space between the pistons is filled with disinfecting liquid and upon the valve B being moved towards its lower
25 position, the liquid is first imprisoned in the seating E thus determining the given amount to be dispensed, & on the valve B reaching its lowest position, the upper edge of the lower piston C is some way below the lower edge of the cylindrical seating E & the liquid escapes from between the pistons into the delivery pipe G in Figure 1 or tank H in Figure 2.

30 The valve B may be constructed either from a tube with the ends closed and with one or more slots J of the proper length arranged at a proper distance between the two ends as shewn in Figure 1 or it may be formed of pistons arranged on a central support as shown in Figure 3 with guiding lugs K arranged on each piston C C to control the pistons when they get beyond the ends of the seating E.

35 The tank A for holding the disinfectant we make so as to be placed either inside as in Figure 2 or outside as in Figure 1 of the flushing tank or other device and we operate the valve of the disinfectant tank either by means of a float L connected thereto and operated by the variation of level in the flushing tank H as in Figure 2.

Or equivalently the valve of the disinfectant tank may be connected to and operated
40 by the mechanism N operated by the float O in the flush tank H as in Fig. 1 or by the valve mechanism of the flushing tank H.

Or where there is no flushing tank the valve B may have an independent operating mechanism for itself which may consist essentially of the mechanism shown in Fig. 1 viz. :—of a pivotted counterbalanced lever P which is connected to
45 the valve B by any means such as the cord or chain R a handle and chain or cord shown in dotted lines Figure 1 being provided for operating the valve B. The operation of our device is as follows :—When a flush is to be made in the case where the float operating arrangement is used as shewn in Figs. 1 & 2 the valve B of the disinfectant tank A is preferably in its upper position when the flush tank H
50 is full ; and when the flush water is let out of the tank H the float O in Figure 1 or L in Figure 2 drops and moves the valve B with it, thus delivering a given quantity of disinfectant into the flush tank H or pipe G to be mixed with the charge of water during its delivery.

The fresh water readmitted in its turn operates the float and raises the valve B
55 of the disinfectant tank into the upper portion to receive a fresh charge of disinfectant ; or in the case where the ordinary flush mechanism is connected to the

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valve, when the mechanism is operated it in turn moves the valve B of the disinfectant tank A and a given quantity of disinfectant is discharged into the flushing tank.

As the pistons C C fit the seating E very accurately no leak takes place during the movement of the valve, and the valve in its end positions is maintained quite tight by the special valve surface or rim F on one or other piston C C, engaging with the valve seat on one or other end of the cylindrical seatings E. 5

We may make the valve of the disinfectant tank adjustable as to volume which may conveniently be done by increasing or decreasing the distance between the cutting off edges of the valve. 10

We illustrate in Figure 3 one way of carrying this into effect; the pistons C. C. are mounted on a central spindle D, one piston being screwed thereon and locked in place by a lock nut S so that the relative position of the pistons to one another may be altered in order to vary the quantity of disinfectant delivered.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, we declare that what we claim is:— 15

1st. A dispensing valve consisting of two pistons or their equivalent mounted some distance apart upon a stem and adapted to work in and be embraced by a cylindrical casing and means for operating the same so that by the reciprocation of the pistons in the seating the space enclosed by the pistons and the seating will be alternately filled and emptied by matter situated on the exterior of the valve seating, substantially as described. 20

2nd. In a dispensing valve as described in Claim 1 the combination of the pistons having a valve edge upon each with a valve seating at each end of the cylindrical seating adapted to form a joint with the said valve edge, substantially as described. 25

3rd. In a dispensing apparatus the combination of a valve as claimed in Claim 1 with a float operated by the change of level of liquid in a tank, substantially as described. 30

4th. In a dispensing valve as claimed in Claim 1 the arrangement of the pistons adjustable to one another to vary the volume of disinfectant to be dispensed, substantially as described.

5th. The construction and arrangement of a disinfectant dispensing apparatus, substantially as described and illustrated in the accompanying drawings. 35

Dated this 16th day of August 1893.

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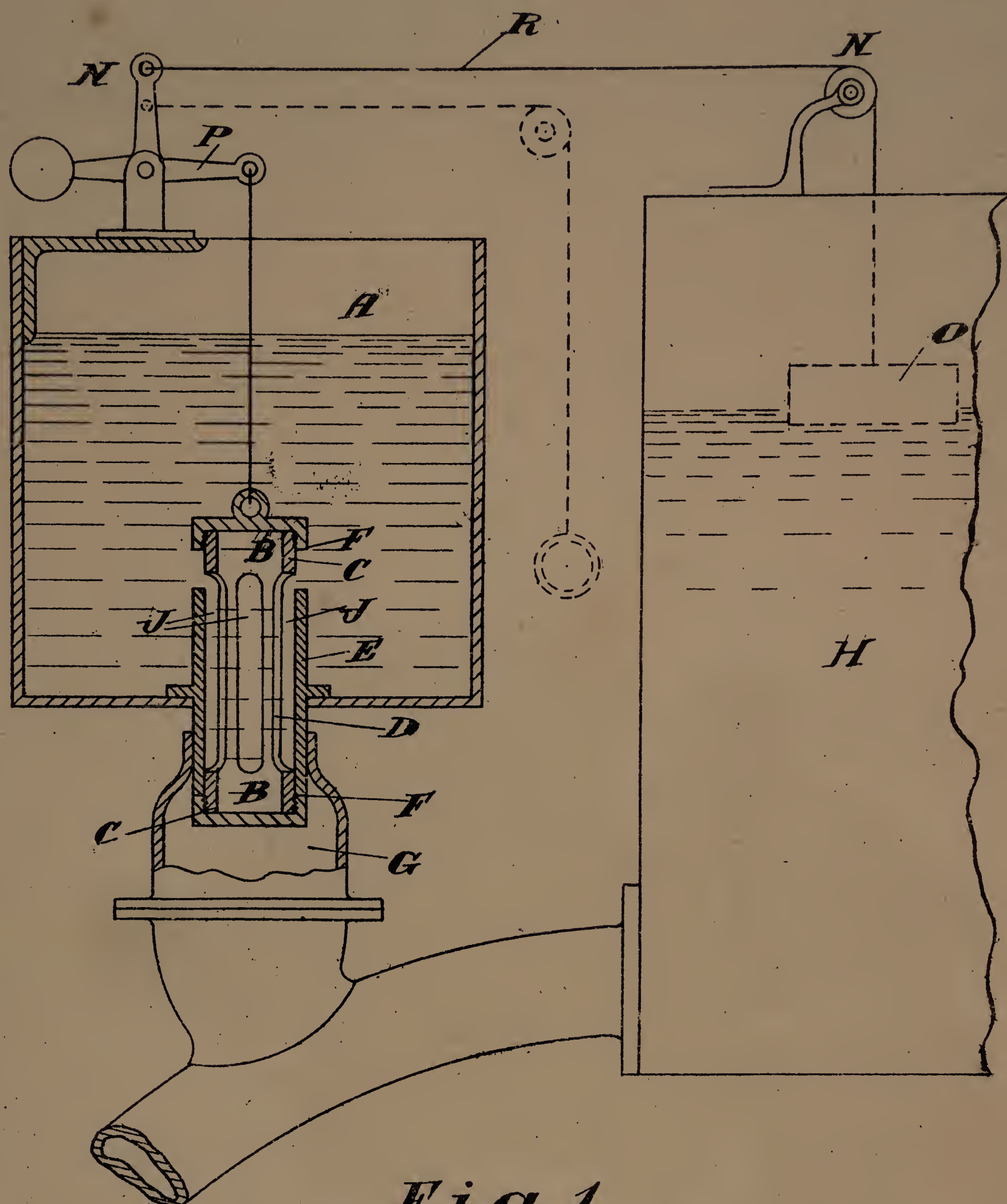


Fig. 1.

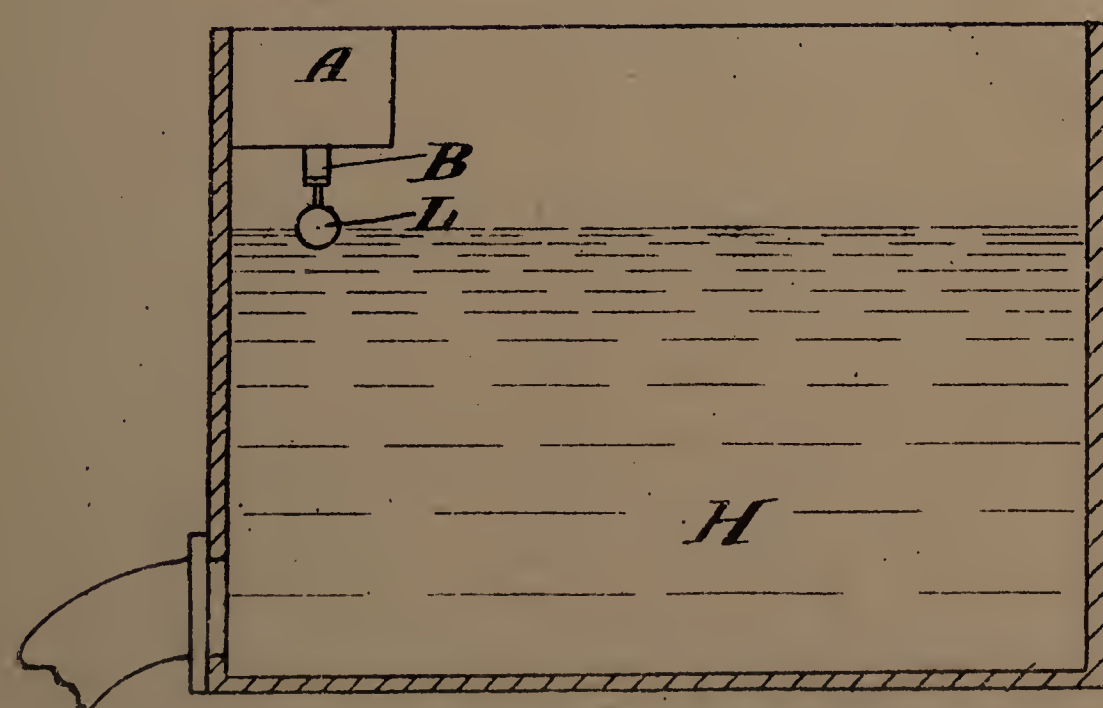


Fig. 2.

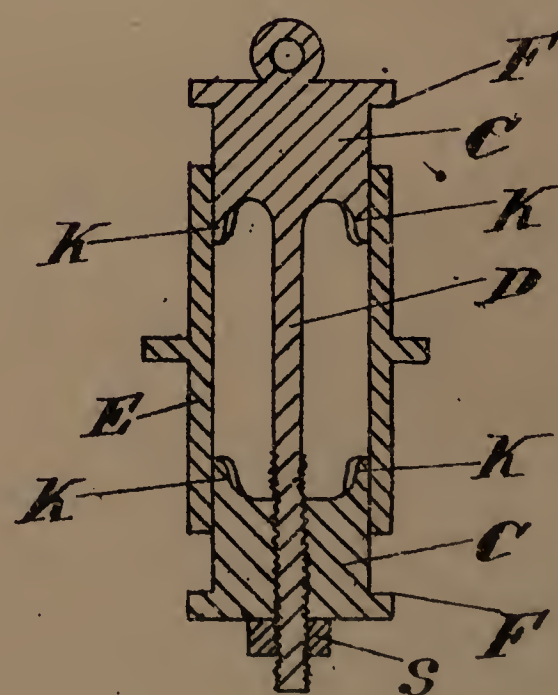


Fig. 3.

[This Drawing is a reproduction of the Original on a reduced scale]

